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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/593,593	06/13/2000	Mark A. Lemkin	IMIN-01005US1	5628

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EXAMINER

KWOK, HELEN C

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 08/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/593,593

Applicant(s)

Lemkin et al.

Examiner

H. Kwok

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 3, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-20 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities. Appropriate correction is required.

In claim 8, line 9, the word "circuitry" should be changed to -- circuit -- to provide proper antecedent basis.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,569,852 (Marek et al.).

With regards to claims 1 and 4, Marek et al. discloses a capacitive accelerometer sensor comprising, as illustrated in Figure 1, a substrate 12; a mass 10; a first finger set 13 comprising two or more first fingers extends parallel to a first displacement axis; a second finger set 14 comprising at least one second finger extends parallel to the first displacement axis such that the

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one second finger terminates between the two first fingers wherein the one second finger is substantially closer to one of the two first fingers (as observed in the figure, the top and bottom distances formed by fingers 13 and 14 are not equal); and an electrical circuit provides a position-dependent force (i.e. acceleration force) along the first displacement axis. (See, column 2, line 55 to column 3, line 20; column 4, lines 29-33)..

4. Claims 1, 4 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by either Publication titled "Micromechanical LIGA-gyroscope" (Schumacher et al.) or Publication titled "New Designs of Micromachined Vibrating Rate Gyroscopes with Decoupled Oscillation Modes" (Geiger et al.).

The publications disclose a gyroscope comprising a substrate; a mass; a first finger set comprising two or more first fingers extends parallel to a first displacement axis; a second finger set comprising at least one second finger extends parallel to the first displacement axis such that the one second finger terminates between the two first fingers wherein the one second finger is substantially closer to one of the two first fingers (as observed in the figure, the top and bottom distances formed by fingers and are not equal); and an electrical circuit provides a position-dependent force (i.e. acceleration force) along the first displacement axis. (See, Figure 3 of Schumacher et al., Figure 3 of Geiger et al.). Furthermore, as observed in the figure of Schumacher et al., there is a plurality of masses with more than one set of fingers as presently claimed.

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-3 and 5-10, 12 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either U.S. Patent 5,569,852 (Marek et al.) or Publication titled "Micromechanical LIGA-gyroscope" (Schumacher et al.) or Publication titled "New Designs of Micromachined Vibrating Rate Gyroscopes with Decoupled Oscillation Modes" (Geiger et al.) in view of U.S. Patent 6,230,563 (Clark et al.).

With regards to claims 2-3, the references do not explicitly disclose the specific parameter and dimensions of the first and second finger sets. Clark et al. discloses a dual mass vibratory rate gyroscope with quadrature error correction capability comprising, as illustrated in Figure 1-3, 11-14, teaches that the length to width ratio of the finger sets is 10 to 1, as disclosed in column 5, lines 51-61. To have set such characteristics as in these claims is considered to have been a matter of design choice that would have been obvious to an artisan of ordinary skill in the art at the time of invention to recognize the advantages and desirability to form beams that are compliant to bending but relative stiff to compression and extension. (See, column 5, lines 61-66 of Clark et al.).

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With regards to claims 5-8, 10 and 12, Clark et al. further discloses the circuit elements as presently claims, like an oscillation feedback loop, capacitive bridge, position sense interface, quadrature detection circuit with a feedback connection. (See, column 7, line 40 to column 8, line 64).

With regards to claim 9, the references, Marek et al., Schumacher et al., Geiger et al., further disclose a third finger set and a fourth finger set to form a second capacitor, as observed in the figures.

With regards to claims 12, 14-20, the claims are commensurate in scope with claims 1-12 and are rejected for the same reasons as set forth above.

Response to Amendment

7. Applicant's arguments with respect to claims 1-10 and 11-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Kwok whose telephone number is (703) 308-8149.

hck
July 26, 2002

HELEN KWOK
PRIMARY EXAMINER
Helen Kwok